



THE METANOMICS SERIES

Paper V · NVM-WP 2026/05 · August 2026

THE RECIPROCITY PRINCIPLE¹

Remittances, Aid, Foreign Investment and the Cooperative Architecture of External Capital in Africa

The Metanomics Series · Sovereign Finance and Institutional Design · Paper V

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¹ **Suggested citation:** Alagidede, Y.I.P. (2026) 'The Reciprocity Principle: Remittances, Aid, Foreign Investment and the Cooperative Architecture of External Capital in Africa', The Metanomics Series, Paper V, Nile Valley Multiversity Working Paper Series, NVM-WP 2026/05. Pungu Telania, Navrongo: Porthologos Press for the Nile Valley Multiversity.

Prepared at the Nile Valley Haven, Techiman, and delivered at the Nile Valley Multiversity, Techiman, Bono East Region, Ghana, in August 2026. The Metanomics Series is the sequel to The Omnidox Lectures, Three Provocations on the Study of Abundance: The Philosophy of Abundance: Scarcity on Trial, the Invisible Mycelium, and the Foundations of Metanomics (Paper I, NVM-WP 2026/01); The Psychology of Abundance: The Inner Architecture of Metanomics (Paper II, NVM-WP 2026/02); and The Architecture of Abundance: The Kassena Granary and the Building of Sovereign Capital (Paper III, NVM-WP 2026/03). The lectures establish the premises used here; the series carries them into the applied domains of public finance, external capital, the reparatory ledger and infrastructure capital, and comprises The Fiscal Architecture of Abundance (Paper IV, NVM-WP 2026/04), on resource rents and domestic revenue; The Reciprocity Principle (Paper V, NVM-WP 2026/05), on external capital; The Ledger of Return (Paper VI, NVM-WP 2026/06), on the reparatory ledger; and The Architecture of Bankability (Paper VII, NVM-WP 2026/07), on the legal coding of infrastructure capital. The series continues in The Omnidox Operating System, NVM-WP 2026/08, on resource-backed money and sovereign ledgers, and Doing Business in Africa, NVM-WP 2026/09, on enterprise on the continent. Nile Valley Multiversity working papers are circulated to invite comment and are not refereed. Comments are welcome to the correspondence address above.

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ABSTRACT

Africa's hierarchy of external capital is inverted. In 2025 it received about US\$70 billion in foreign direct investment and US\$29.0 billion in bilateral development assistance, against remittances that passed US\$100 billion in 2024. The largest, most stable and least conditional flow carries the least policy architecture; the smallest and most conditional carries the most. This paper asks how each flow should be redesigned once reciprocity, rather than transfer, is the organising principle, and it reports four findings. Remittances are misclassified: recorded as transfers and treated as consumption, they are the continent's most reliable external capital, yet sending US\$200 to sub-Saharan Africa cost 8.78% in early 2025 against a global 6.49% and an SDG target of 3%, and 9 of the 13 world corridors priced above 20% originate within sub-Saharan Africa. Closing that gap would release US\$3 billion to US\$6 billion a year, between a tenth and a fifth of all bilateral aid to the continent. Aid has ceased to be a planning variable: DAC assistance fell 23.1% in 2025 to US\$174.3 billion, bilateral flows to Africa fell 23.9%, and assistance to Ukraine, at US\$44.9 billion including EU institutions, exceeded all bilateral aid to sub-Saharan Africa combined. Foreign investment competes in a race to the bottom that global minimum taxation has made self-defeating, since forgone source-state revenue is now collectible by a residence state. And African capital markets, holding 1% of global sovereign bonds against a 3% share of world output, are being bypassed by a tokenisation market worth US\$32.2 billion on-chain that routes African assets offshore. Against these findings the paper specifies four remedies: a reciprocity test for cooperation, a contribution test replacing entry incentives, tokenised real-world assets listed and settled on African exchanges through continental infrastructure that already exists, and the pooling of cooperative capital, of which South Africa's stokvels and Kenya's savings cooperatives already hold documented balance sheets.

Keywords: Remittances; diaspora finance; official development assistance; foreign direct investment; tax competition; tokenisation; cooperative finance; capital markets; Metanomics; reciprocity.

JEL: F24 · F21 · F35 · G23 · O16 · O55 · P13 · H87

1. Introduction: The Hierarchy Is Upside Down

Rank Africa's external capital flows by size and a striking picture emerges. Remittances passed US\$100 billion in 2024, with the World Bank putting the figure above US\$104 billion; in 2023 they were about US\$90.2 billion, some 5.2% of the continent's output. Foreign direct investment reached about US\$70 billion in 2025, down from an exceptional US\$94 billion in 2024 but still the third-highest level since 1990. Bilateral official development assistance from the members of the Development Assistance Committee amounted to US\$29.0 billion for Africa as a whole and US\$24.5 billion for sub-Saharan Africa. The largest flow is therefore roughly 1.4 times the second and about 3.4 times the third.

Now rank the same flows by the volume of policy architecture devoted to them. Aid, the smallest, has a dedicated committee at the OECD, a 60-year statistical apparatus, a specialised academic literature, an entire class of ministries and agencies in donor countries, and a permanent seat in every African finance ministry's medium-term framework. Foreign investment, the second, has investment promotion agencies, bilateral

treaties, incentive regimes, special economic zones and a continental protocol. Remittances, the largest and by a wide margin the most stable, have a transaction fee and very little else. There is no African state whose development plan is organised around the flow that actually arrives.

This inversion is the subject of the paper. It is not a complaint about donors. It is an observation about design, and it follows directly from the argument of the preceding papers in this series. The first Omnidox lecture (Alagidede, 2026a) established that scarcity above the entropic floor is manufactured by rules rather than given by nature. The companion working paper on infrastructure finance, which follows this one in the series (NVM-WP 2026/07), shows that Africa's domestic capital pools exceed the external flows the continent has received across a decade, and that the binding constraint is the legal code that converts an asset into capital. The fiscal paper showed that the state's own revenue base is misdirected onto consumption while the rent sits unrecorded. The present paper extends the sequence by asking a further question: what should external capital be for, once it is understood that it is neither the largest nor the most reliable part of the picture.

The organising principle is reciprocity. In the mycelial mechanism set out in the first lecture, a generative network does not receive; it exchanges. The plant rewards the fungal partner that delivers and withholds from the one that does not, so that correction of a shortfall and alignment of incentives are the same motion. Applied to external finance, this yields a single test that runs through every section below: does the flow create an obligation on both sides, or only on one? Aid organised as transfer creates an obligation on the recipient alone, which is why it produces dependence irrespective of the donor's intentions. Foreign investment attracted by incentive creates an obligation on the host alone, which is why the race to the bottom is a race. Remittances, by contrast, are already reciprocal, being sent by people who expect nothing from the state and receive nothing from it, which is precisely why they are stable and precisely why they have been ignored.

The paper proceeds in 11 further sections. Section 2 states the antecedent framework so that this paper stands alone. Section 3 reviews seven bodies of scholarship, identifies six gaps and states eight contributions. Section 4 measures the inverted hierarchy. Section 5 treats remittances as the misclassified flow and specifies five instruments. Section 6 sets out the reciprocity test for development cooperation after the aid collapse. Section 7 proposes the contribution test in place of entry incentives for foreign investment. Section 8 treats tokenised real-world assets on African exchanges, with the honest limits stated. Section 9 develops cooperative and communal capital as the pooling architecture, within and across borders. Section 10 consolidates the instruments into a single ledger. Section 11 meets 6 objections. Section 12 concludes. An evidence dossier and reference list follow.

2. Antecedents: The Omnidox Framework and the External Question

There are five results that are load-bearing here, three from the Omnidox lectures and two from the companion working papers. They are stated compactly for readers who have not read them.

The scarcity taxonomy separates relative scarcity, the trivial fact that a chooser cannot have everything at once; absolute scarcity, the thermodynamic and ecological limit of a finite planet, which must be honoured; and manufactured scarcity, want produced by rules that human institutions wrote and could rewrite. An 8.78% charge on a US\$200 remittance is manufactured scarcity in its purest observable form. Nothing physical is consumed by the transfer; the charge is a price set in a market whose structure is a policy choice in both the sending and receiving jurisdiction.

The two operating systems. Monodox organises economic life around the premise that there is never enough and treats the allocation of a fixed stock as the whole of the problem. Omnidox begins from sufficiency as the normal condition of a network that understands its own architecture, and takes the central task to be the design of relationships through which renewing wealth is created, circulated and shared. Applied to external capital, the contrast is exact. The Monodox state competes for a fixed pool of foreign capital by lowering its terms, which is the race to the bottom. The Omnidox state asks what it brings to the exchange and prices its participation accordingly.

The mycelial mechanism supplies the design principles: a generative network redistributes from surplus toward need, keeps the system rather than any node in balance, senses deficiency and corrects it by reciprocal reward rather than by decree, and regenerates the substrate it feeds upon. The third property is the one this paper leans on hardest, and section 9 shows that Africa's cooperative savings institutions already run it at scale, without theory and without recognition.

From the companion working papers, two results carry forward, the first developed in full in NVM-WP 2026/07, which follows this paper, and the second in NVM-WP 2026/04. Bankability is a legal artefact purchased module by module, so that whoever codes an asset captures the value the coding creates; this is why section 8 treats the jurisdiction of a tokenised African asset as the central question rather than a technicality. And rent capture is an information contest before it is a rate contest; this is why section 7 replaces the entry incentive, which is a promise made before anything is known, with a contribution test, which is a measurement made after.

3. The Literature and Its Gaps

Bearing on external capital in Africa are seven bodies of scholarship. Each is substantial, each holds a fragment, and they do not speak to each other. This section reviews them, states where each stops, and sets eight contributions against the resulting gaps.

3.1 The economics of remittances

The remittance literature is the most empirically developed of the 7. Ratha and colleagues at the World Bank built the measurement apparatus and established the flows as the largest source of external finance to low and middle income countries other than China since 2015, exceeding official development assistance in every estimate since 2000. Yang (2011) surveyed the microeconomic evidence on household use and found substantial investment in education, health and small enterprise alongside consumption. Clemens and McKenzie (2014) challenged the claim that measured remittance growth reflects real growth rather than improved recording. Against the optimistic account, Chami, Fullenkamp and Jahjah (2005) argued that remittances are compensatory transfers that may reduce labour supply and weaken incentives, and a related literature examines Dutch disease effects on the real exchange rate.

What this literature has not done is treat remittances as capital. Its analytical frame is the household and its policy frame is cost reduction. The question of what instruments a state should offer so that a portion of a US\$100 billion annual flow can voluntarily enter long-dated domestic assets is posed rarely and answered thinly. This is the first gap.

3.2 Aid effectiveness

The aid literature is the oldest and the most exhausted. Burnside and Dollar (2000) found aid effective in good policy environments; Easterly, Levine and Roodman (2004) found the result fragile to sample and specification; Rajan and Subramanian (2008) found no robust positive effect on growth. Moyo (2009) argued that aid actively harms African institutions; Sachs (2005) argued the opposite from the same continent; Deaton (2013) located the problem in the political economy of the recipient state, arguing that revenue arriving from outside severs the accountability link that domestic taxation creates. Riddell (2007) provided the most careful synthesis and concluded that the honest answer varies by instrument and context.

That debate has produced an impasse, and the impasse now has an expiry date. Assistance from the Development Assistance Committee fell 23.1% in 2025 and is projected to fall a further 5.8% in 2026. Whether aid works has become a less pressing question than what replaces the planning assumption that it exists. The literature has no positive account of a post-aid cooperation architecture, and constructing one is the second gap.

3.3 Foreign direct investment and spillovers

The investment literature asks whether foreign firms transmit productivity to domestic ones. Aitken and Harrison (1999), using Venezuelan plant data, found negative horizontal spillovers within industries; Javorcik (2004), using Lithuanian data, found positive vertical spillovers through backward linkages to suppliers. Alfaro and colleagues (2004) showed that the growth benefit of foreign investment is conditional on the depth of the domestic financial system. Rodrik (2004, 2018) argued that the benefit depends on whether the investment enters activities with learning potential, which is a matter of industrial policy rather than of openness.

The consensus that emerges is that foreign investment helps conditionally, and that the conditions are domestic. What does not follow from the literature, and what policy has nonetheless inferred, is that the volume of investment is the right objective. Investment promotion in Africa is organised almost entirely around attraction, and the instruments of attraction are concessions granted before any contribution can be observed. The literature has not supplied an operational alternative to the entry incentive. This is the third gap.

3.4 Tax competition and the race to the bottom

A fourth literature explains why the concessions are granted. Zodrow and Mieszkowski (1986) and Wilson (1986) established the theory of tax competition for mobile capital, under which independently optimising jurisdictions set inefficiently low rates. Devereux, Lockwood and Redoano (2008) documented strategic interaction in observed rates. Keen and Mansour (2010) traced revenue mobilisation in sub-Saharan Africa under globalisation. James (2013) reviewed the evidence on tax incentives in developing countries and found that they rarely rank among the leading determinants of investment location, while their revenue cost is substantial and measurable.

This literature knew the incentive was a poor instrument long before the global minimum tax arrived. What it has not yet fully absorbed, and what African policy has barely begun to act upon, is that a coordinated minimum effective rate changes the arithmetic entirely. Revenue that a source state forgoes on an in-scope multinational may now be collected by the residence state through the top-up mechanism, so that the concession transfers revenue from an African treasury to a foreign one and delivers nothing to the investor. That this transforms the incentive from an inefficient instrument into a self-defeating one is stated in the technical literature and is almost absent from African investment promotion practice. This is the fourth gap.

3.5 Capital market development and the missing depth

A fifth literature concerns why African firms and states cannot raise capital at home. Levine and Zervos (1998) established the association between market liquidity and growth. The OECD's Africa Capital Markets Report 2025 supplies the current measurement, and it is severe: Africa accounts for 1% of global sovereign bonds against a 3% share of global output; African companies account for only 1% of the total value of equity raised globally since 2000; capital market activity is highly concentrated, with South Africa, Morocco and Egypt holding 80% of total market capitalisation; insurance penetration is 3.5% of GDP against a global average of about 7%; and pension fund assets stand at 23% of GDP against 34% globally.

The prescriptions that follow are familiar and slow: improve disclosure, strengthen market infrastructure, build benchmark yield curves, deepen the investor base. All are correct. None addresses the possibility that the sequencing might now be reversed, and that a new settlement technology could allow instruments to be created and traded before the classical market microstructure is complete. That possibility is examined in section 8 and is not treated in this literature.

3.6 Tokenisation in emerging markets

A sixth and newer literature examines distributed ledgers in finance. Zetzsche, Arner and Buckley (2020) provided the first systematic legal treatment; Schär (2021) described the architecture; Aramonte, Huang and Schrimpf (2021) advanced the decentralisation illusion, showing that governance and control reconcentrate so that intermediation is relocated rather than removed; Makarov and Schoar (2022) and the Financial Stability Board (2023) developed the risk analysis. The market is no longer theoretical: on-chain value across tokenised real-world assets reached about US\$32.2 billion by June 2026, from roughly US\$11.8 billion a year earlier, with tokenised Treasuries the largest category.

Almost all of this work concerns developed markets and instruments that were already liquid. The African question is different and has scarcely been posed: what happens when a continent whose classical market infrastructure is thin acquires access to a settlement technology that does not require it. The practitioner evidence meanwhile points to a specific danger. Tokenisation projects facing restrictive domestic regulation routinely structure issuance for African assets through Mauritius, producing a mismatch between the token's governing jurisdiction and the underlying asset's. This is the coding problem analysed in the companion working paper on infrastructure finance (NVM-WP 2026/07) reappearing in a new medium, and its absence from the literature is the fifth gap.

3.7 Cooperative finance and rotating savings

The seventh literature is the oldest in practice and the youngest in recognition. Ardener (1964) provided the comparative anthropology of rotating savings and credit associations; Bouman (1995) documented their global persistence; Besley, Coate and Loury (1993) supplied the formal analysis, showing that a rotating association can dominate autarkic saving for indivisible purchases. Ostrom (1990) established that communities govern shared resources sustainably through monitored norms, graduated sanction and nested institutions of their own devising. The African instances are documented and substantial: stokvels in South Africa, susu in Ghana, esusu and ajo in Nigeria, tontines across francophone West Africa, chamas and merry-go-rounds in East Africa, and the regulated savings and credit cooperative movement across the continent.

This literature treats these institutions as devices for household saving and consumption smoothing, which is what they are. What it does not ask is whether their aggregate balance sheets constitute an investable asset base, and what would have to change for them to hold anything other than loans to their own members. The question of the asset side of communal capital is the sixth gap, and section 9 addresses it.

Literature	What it established	Where it stops	What this paper adds
Economics of remittances	The largest external flow to LMICs other than China since 2015; household investment effects; high transfer costs	Frames remittances as household transfers and policy as cost reduction	Treats remittances as capital and specifies five instruments through which they can voluntarily enter

Literature	What it established	Where it stops	What this paper adds
			long-dated domestic assets
Aid effectiveness	Contested growth regressions across three decades; the accountability critique of external revenue	No positive account of what replaces the planning assumption once aid contracts	The reciprocity test: four conditions distinguishing cooperation from transfer, applied after the 2025 collapse
FDI and spillovers	Benefits are conditional, and the conditions are domestic	Policy infers that volume is the objective; no operational alternative to the entry incentive	The contribution test: six measured criteria replacing concessions granted before anything is known
Tax competition	Incentives rank low among location determinants and cost substantial revenue	Has not absorbed that a coordinated minimum rate makes the concession self-defeating rather than merely inefficient	States the arithmetic plainly: forgone source revenue is collectible by a residence state
Capital market development	Africa holds 1% of global sovereign bonds against a 3% output share; concentration and shallow institutional base	Assumes classical sequencing: microstructure first, instruments after	Examines whether settlement technology permits instruments before microstructure, and what that requires
Tokenisation in emerging markets	Market now US\$32.2 billion on-chain; the decentralisation illusion; DeFi risk taxonomy	Written about already-liquid developed-market claims; silent on jurisdiction mismatch for African assets	Identifies offshore issuance as the coding problem in a new medium, and specifies the African listing alternative
Cooperative finance and ROSCAs	Rotating associations dominate autarkic saving; commons governance works	Treats them as consumption-smoothing devices; never asks about the asset side	Pooling architecture that gives cooperative balance sheets an investable asset side, within and across borders

Table 1. The seven literatures: the fragment each grasped, and where it stops

Source: author's synthesis of the works cited in Section 3. Full bibliographic details for each work appear in the reference list.

3.8 The six gaps and the eight contributions

Gap 1 is the misclassification of remittances as consumption rather than capital. Contribution 1 measures the inverted hierarchy and shows that the largest external flow carries the least architecture. Contribution 2 quantifies the transfer charge as a manufactured cost and specifies the five instruments that would convert a portion of the flow into long-dated domestic assets.

Gap 2 is the absence of a post-aid cooperation framework. Contribution 3 is the reciprocity test, four conditions under which an external transfer is cooperation rather than dependence, together with the observation that the 2025 collapse settles the effectiveness debate by arithmetic rather than by argument.

Gap 3 and Gap 4 are the entry incentive and its now self-defeating arithmetic. Contribution 4 is the contribution test, six measured criteria applied after entry in place of concessions granted before it, and Contribution 5 is the local listing requirement, which converts an investment promotion instrument into a capital market development instrument at no fiscal cost.

Gap 5 is the jurisdiction mismatch in African tokenisation. Contribution 6 specifies the listing and settlement architecture that keeps the coding onshore, using continental infrastructure that already exists, and states the honest limits of what tokenisation can and cannot deliver.

Gap 6 is the missing asset side of communal capital. Contribution 7 is the pooling architecture that aggregates cooperative balance sheets into instruments a corridor financing can absorb, and Contribution 8 is the consolidated instrument ledger of section 10, which applies a single reciprocity test across all four flows and is the paper's principal analytical output.

THE INVERTED HIERARCHY

The condition in which a country's external capital flows are ranked in inverse order by the policy attention they receive: the largest, most stable and least conditional flow governed by nothing but a transaction fee, and the smallest, most volatile and most conditional flow governed by an entire apparatus of ministries, agencies, treaties and plans. The inversion is not accidental. Architecture accumulates around flows that require negotiation, and remittances require none, which is precisely why they are dependable and precisely why they have been left alone.

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4. The Inverted Hierarchy Measured

4.1 Remittances

Recorded remittances to Africa passed US\$100 billion in 2024, with the World Bank placing the figure above US\$104 billion, against about US\$90.2 billion in 2023, equivalent to roughly 5.2% of continental output and approximately double official development assistance in that year. Egypt was the largest recipient at US\$22.7 billion in 2024, growing 16% year on year; Nigeria followed at US\$19.8 billion and Morocco at US\$12 billion. In 19 of Africa's 54 countries remittances are worth at least 4% of GDP, and they exceed a fifth of output in The Gambia, Lesotho and Comoros and a tenth in Liberia, Cape Verde and Guinea-Bissau. Intra-African flows are substantial, estimated at roughly a fifth of the total.

Ghana is the instructive case for this series. Officially recorded remittances reached US\$6.65 billion in 2024, and estimates including informal channels put the total nearer US\$11.5 billion, which would mean that close to a third of the country's foreign exchange earnings now arrive as household transfers, exceeding the proceeds of cocoa and approaching those of gold. A country that has just built a statutory board to formalise its gold channel, with the measured results set out in the fiscal paper of this series, has an equivalent and larger channel operating with no architecture at all.

4.2 Foreign direct investment

Foreign direct investment into Africa reached about US\$70 billion in 2025 according to the World Investment Report 2026, below the exceptional US\$94 billion of 2024, when a small number of very large transactions inflated the total, but the third-highest level since 1990 and roughly one third above the 2010 to 2024 average. Global flows rose 6% to US\$1.6 trillion, so Africa's share was about 4.4%. Egypt remained the largest recipient at about US\$15 billion. African least developed countries received about US\$33 billion. The value of announced greenfield projects fell by almost a third even as the number of projects rose, indicating broader engagement through smaller investments.

There are two structural features that matter more than the headline. Concentration is extreme and rising: the world's top 20 host economies attracted more than 80% of global flows, and strategic sectors accounted for 44% of global greenfield project values, up from 16% in 2020. And the composition is volatile in a specific way: South Africa recorded negative inflows of about US\$6 billion in 2025 following a single corporate restructuring, while Mozambique's inflows rose 80% to US\$6 billion on the resumption of construction at liquefied natural gas projects. A flow whose annual continental total can be moved by a fifth by two transactions is not a planning variable in any useful sense.

4.3 Official development assistance

The 2025 figures are the most consequential development in the external financing of Africa in a generation, and they deserve to be stated precisely. Assistance from members and associates of the Development Assistance Committee amounted to US\$174.3 billion in 2025, a fall of 23.1% in real terms, the largest annual contraction in the history of the measure, bringing the total to 0.26% of donors' combined national income and to a level last seen in 2015. Bilateral assistance fell 26.4% to US\$126.4 billion. Bilateral assistance to Africa fell 23.9% to US\$29.0 billion, to sub-Saharan Africa 26.3% to US\$24.5 billion, and to least developed countries 25.8% to US\$23.5 billion. The five largest providers accounted for 95.7% of the total decline, with the United States alone driving 75.1% of it as its assistance fell 56.9%. The OECD projects a further 5.8% decline in 2026 and expects the level to remain 6.6% below 2025 as late as 2028.

One comparison establishes the character of the flow better than any argument about effectiveness. Bilateral assistance to Ukraine in 2025, including outflows from European Union institutions, totalled US\$44.9 billion. That is the largest volume of assistance ever provided to a single country, and it exceeded total bilateral assistance by DAC members to all least developed countries, or to all countries in sub-Saharan Africa, combined.

Development assistance is allocated by the strategic interest of the provider. This is not a moral criticism; it is a description of what the instrument is, and it is the reason the instrument cannot bear the weight of a development plan.

4.4 The net position

Gross inflows are only half of a balance sheet, and the other half is decisive. The companion working paper on infrastructure finance (NVM-WP 2026/07) records that external debt service across the continent was projected to rise from 15.4% of government revenue in 2024 to about 18.2% in 2025, that interest payments now exceed public spending on health or on education in four out of five African countries, and that 32 countries spend more servicing external debt than funding healthcare. The illicit financial flow estimate of US\$88.6 billion a year (UNCTAD, 2020), equivalent to 3.7% of continental output, sits alongside it as an unrecorded outflow.

Placed against gross inflows of roughly US\$200 billion across the 3 recorded channels, these outflows are of the same order of magnitude as the inflows. The continent is not, in any meaningful aggregate sense, a net recipient of external capital; it is a net exporter of it through channels that carry no ministry and no promotion agency. That observation is not new, and Ndikumana and Boyce have documented its capital flight component for two decades (Ndikumana and Boyce, 2022). What is new is the composition. In an era of collapsing assistance and concentrated investment, the net position is determined overwhelmingly by two variables: what the continent pays to service external debt, and what leaves without being recorded. Neither is affected in any degree by the promotion of foreign investment, which is where the institutional effort is concentrated.

Flow	Latest magnitude	Volatility	Who sets the terms	Policy architecture devoted to it
Remittances	Above US\$100 billion in 2024; about 5.2% of continental output in 2023	Low; counter-cyclical in recipient downturns	The sender, household to household	A transaction fee. No dedicated instrument set in almost any African state
Foreign direct investment	About US\$70 billion in 2025, from US\$94 billion in 2024	High; a continental total movable by single transactions	The investor, negotiating against competing jurisdictions	Promotion agencies, incentive regimes, treaties, special economic zones, a continental protocol
Official development assistance	US\$29.0 billion bilateral to Africa in 2025, down 23.9%	Very high and now structurally declining; a further 5.8% fall projected for 2026	The provider, by strategic interest	A committee of the OECD, 60 years of statistics, ministries in every donor state, a chapter in every recipient plan

Flow	Latest magnitude	Volatility	Who sets the terms	Policy architecture devoted to it
Portfolio and market finance	Africa holds 1% of global sovereign bonds against a 3% share of world output	High; access closes in stress	The rating agency and the external investor	Capital market authorities, exchanges, listing rules, an emerging continental linkage

Table 2. The four external flows to Africa compared

Sources: World Bank remittance data as reported in Section 4.1; UNCTAD (2026) for investment; OECD (2026) for development assistance; OECD (2025) for the capital market share. Columns 3 to 5 are the author's characterisation on the evidence set out in Sections 4.1 to 4.3.

The table states the paper's opening finding. Architecture accumulates around flows that must be negotiated, because negotiation requires institutions. Remittances require no negotiation with any African state, which is why they are dependable and why no African state has built anything around them. The correction is not to negotiate with the diaspora, which would be both futile and offensive, but to offer instruments the diaspora may choose to enter.

5. Remittances: The Misclassified Flow

5.1 The transfer charge as manufactured cost

The cost of sending US\$200 to sub-Saharan Africa averaged 8.78% of the transaction value in the first quarter of 2025, against a global average of 6.49% and a Sustainable Development Goal target of 3%. The region has been the most expensive destination in the world for the whole period the series has been published, and the persistence is the point: these costs have been, in the words of one recent analysis of the corridor data, stubbornly stable across 36 consecutive quarters. Intra-African transfers are worse than transfers from outside. In the third quarter of 2025, of the 13 corridors worldwide priced above 20%, 9 originated within sub-Saharan Africa.

The last fact deserves emphasis because it disposes of the standard explanation. If the cost of sending money to Africa were driven by distance, compliance burden or the risk profile of the destination, then the cheapest corridors would be the short intra-regional ones. They are the most expensive. What drives the charge is market structure: concentration among a small number of operators, exclusivity arrangements with payout networks, the cost of foreign exchange conversion through third currencies, and the fees banks and wallet providers levy on the final domestic leg. Each is a regulatory variable in either the sending or the receiving jurisdiction. This is manufactured scarcity in the sense of the first Omnidox lecture, and it is unusually well documented.

The magnitude is worth stating carefully, with assumptions exposed. On recorded flows of about US\$100 billion and a headline charge of 8.78%, the annual transfer cost approaches US\$8.8 billion. That figure is an upper bound, because the published cost refers to a US\$200 transfer and larger transfers cost proportionately less; a blended

estimate in the range of US\$3 billion to US\$6 billion released by moving to the 3% target is defensible on the same data. Even the lower bound of that range exceeds one tenth of all bilateral development assistance to Africa in 2025, and the upper bound approaches a fifth of it. No donor conference in prospect will deliver a comparable sum, and this one requires no donor.

5.2 The classification error

In the balance of payments, remittances are recorded as current transfers. In national policy they are treated as consumption, and the standard reference to their use is that they fund school fees, medicines and roofs. All of that is true and none of it is an argument. A household that repairs a roof has made a capital investment; a household that pays school fees has made one with a longer payback than most infrastructure projects. The classification error is not in the accounting convention, which is defensible on its own terms, but in the policy inference drawn from it, which is that remittances are somebody else's business.

The corrective is a distinction between the flow and the stock behind it. Remittances are the visible flow. Behind them sits diaspora savings, which are far larger and almost entirely held outside the continent. The order of magnitude is indicative rather than precise, but the available estimates put diaspora savings at more than 3% of regional output for sub-Saharan Africa, and for Ghana specifically at a figure that may approach 85% of gross national savings. Whatever the exact number, the object of policy is the stock and not the flow, and the stock is held by people who have made a demonstrated, repeated and unconditional commitment to the country in question.

RECIPROCAL CAPITAL

External finance that creates an obligation on both parties rather than on the recipient alone. Its test is not the identity of the provider or the concessionality of the terms but the symmetry of the relationship: whether the party supplying the capital has undertaken something enforceable, whether the receiving community set the purpose, whether capability was transferred and measured, and whether the arrangement was designed to end. Remittances are already reciprocal and are therefore stable. Aid organised as transfer is not, and is therefore neither stable nor developmental, however generous its intention.

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5.3 The five instruments

What follows is an instrument set rather than an exhortation. Each is in use somewhere and each has a documented failure mode.

Instrument 1: the diaspora bond

A state issues foreign currency debt targeted at nationals abroad, hoping for a patriotic discount on pricing. The comparative record is strong and the African record is mixed. Israel has raised more than US\$44 billion since 1951; India raised about US\$11 billion

across 3 issues between 1991 and 2000, beginning with US\$1.6 billion during its 1991 crisis. Ethiopia issued Africa's earliest ambitious programme, beginning in 2008 with the Millennium Corporate Bond for the Ethiopian Electric Power Corporation and continuing in 2011 for the Grand Ethiopian Renaissance Dam, with multi-currency denominations, varied maturities and low minimum subscriptions; take-up nonetheless fell well short, the programme attracted a United States Securities and Exchange Commission enforcement action resolved by settlement, and the associated infrastructure bond drew in the order of US\$50 million against a project costed at about US\$5 billion. Nigeria's 2017 issuance is the counter-example: US\$300 million at 5.625% over five years, structured as a global bond registered in both the United Kingdom and the United States and listed on the London Stock Exchange, marketed through established institutions, oversubscribed to 130% of target with investors from 14 countries.

The lesson that the comparison yields is precise and it is not about patriotism. Nigeria succeeded because it made the instrument credible as an investment: recognised listing venues, regulatory supervision the investor already trusted, market-consistent pricing and accessible minimums. Ethiopia's difficulty was not insufficient sentiment but insufficient credibility. Affinity supplies the demand curve; it does not substitute for the legal and regulatory coding that makes an instrument holdable. That is the argument of the companion working paper on infrastructure finance (NVM-WP 2026/07) applied to a retail investor rather than a pension trustee.

Instrument 2: the diaspora savings and investment account

A regulated domestic account, denominated in foreign currency or indexed, opened remotely with diaspora identity documents, paying a market rate and permitting investment into listed domestic instruments. Its advantage over the bond is that it is continuous rather than episodic, so that it captures the savings stock rather than a moment of enthusiasm, and that it builds a relationship the state can subsequently draw on. Its requirements are remote identity verification, a resolution of the tax residence question, and an unambiguous, legislated guarantee of convertibility on exit. The third is the binding constraint in most African jurisdictions and no amount of marketing substitutes for it.

Instrument 3: future flow securitisation

A bank or a state monetises the predictable future stream of remittance receipts by issuing notes secured on the receivables, with payments routed through a designated offshore collection account. The technique has raised substantial sums for issuers in several emerging markets and its attraction is that it can achieve a rating above the sovereign, because the cash never enters the sovereign's jurisdiction before it services the note. That last feature is also its danger, and it is exactly the convertibility and repatriation module analysed in the companion working paper on infrastructure finance (NVM-WP 2026/07): the structure works by removing the flow from national control. It belongs in the instrument set, and it should be used with the sovereignty cost consciously priced rather than discovered later.

Instrument 4: remittance-linked credit

A recorded remittance history is an income record, and an income record is the missing input in credit assessment for the households the formal system does not reach. Where the receiving institution is permitted to use verified remittance inflows in underwriting, a mortgage, a school fee facility or a working capital line becomes possible for a household with no payslip and no collateral. This instrument requires no new capital at all. It requires a credit information framework that recognises remittance data and a data protection regime that makes the household's consent meaningful.

Instrument 5: the matched community fund

Hometown associations and diaspora collectives already finance clinics, boreholes, classrooms and roads, generally as gifts and generally without coordination with public investment planning. A matching facility, in which a public authority commits to match verified diaspora contributions to projects meeting published criteria, converts an uncoordinated philanthropic flow into a co-financing instrument with two principals. The Mexican precedent is well known and its African application is thin. Its design requirement is a published project pipeline the diaspora can inspect, which is the same requirement as everything else in this series.

The intra-African corridor as a special case

One element of the instrument set is distinct enough to be stated separately. The most expensive remittance corridors in the world are African corridors sending to other African countries, and the cause is structural rather than commercial. A transfer between 2 African currencies is customarily converted into a third currency and routed through a correspondent bank outside the continent before being converted again on arrival. The sender pays two spreads and a correspondent fee for a transaction that never needed to leave the continent.

The Pan-African Payment and Settlement System was built precisely to remove that detour, providing multilateral net settlement in local currencies without correspondent intermediation outside Africa. Its extension from trade payments into retail remittance corridors is the single highest-return intervention available in this entire section, because it addresses the most expensive corridors in the world with infrastructure that already exists and requires no external consent. The obstacles are the licensing perimeter for remittance operators in each jurisdiction, the interoperability of national payment switches, and the cap on fees for the final domestic leg. All three are domestic regulatory variables.

Instrument	What it mobilises	Principal requirement	Documented failure mode
1. Diaspora bond	A discrete tranche of diaspora savings for a named purpose	Recognised listing venue, credible supervision, market-consistent pricing, low minimums	Affinity marketing without regulatory credibility: undersubscription and, in one case, securities enforcement

Instrument	What it mobilises	Principal requirement	Documented failure mode
2. Diaspora savings and investment account	The continuous savings stock rather than a moment of enthusiasm	Remote identity verification, tax residence clarity, legislated convertibility on exit	Convertibility doubt: the account is opened once and never funded again
3. Future flow securitisation	The predictable forward stream of receipts, at a rating above the sovereign	Designated offshore collection account and a stable corridor history	Sovereignty cost: the structure works by removing the flow from national control
4. Remittance-linked credit	No new capital; it converts an income record into borrowing capacity	Credit information framework recognising remittance data; meaningful consent	Data misuse and over-indebtedness where consent is nominal
5. Matched community fund	Uncoordinated philanthropic giving, converted into co-financed public investment	A published project pipeline the diaspora can inspect	Matching without transparency: the fund becomes a patronage instrument

Table 3. The five instruments for diaspora capital

Source: author's construction. The comparative record in column 4 draws on the diaspora bond evidence reviewed in Section 5.3, including the Ethiopian and Nigerian issuances, and on the securitisation and financial inclusion literature cited in the reference list.

6. Cooperation After the Aid Collapse

The effectiveness debate reviewed in section 3.2 has been settled by arithmetic rather than by argument. A flow that fell 23.1% in a single year, that is projected to fall a further 5.8% the next, and that is expected to remain below its 2025 level as late as 2028, is not a variable around which a 10-year development programme can be constructed. The question is no longer whether aid works. It is what, if anything, should replace it in the architecture, and on what terms.

The Omnidox answer follows from the mycelial principle of reciprocal reward. In the fungal symbiosis the plant rewards the partner that delivers and withholds from the one that does not; correction and incentive are the same motion, and neither party is a supplicant. A transfer that flows in one direction, on conditions set by the party sending it, for purposes it selects, with no obligation running the other way, is not a symbiosis. It is the extractive relationship inverted, and it produces the same dependence by a gentler route.

There are four conditions that distinguish cooperation from transfer. They are proposed here as a test that an African government can apply to any offer on the table, and that can be written into the terms of engagement rather than assumed.

Arrangement	Counterpart obligation	Recipient-set purpose	Verdict
General budget support with policy conditionality	None on the provider	No; conditions are the provider's	Transfer. Produces dependence irrespective of intention
Technical assistance with provider-supplied experts	None; the expertise leaves with the expert	Frequently not	Transfer, unless a named counterpart institution and a costed handover are written in
Concessional finance for a non-commercial public good	Below-market pricing at the provider's cost	Yes, where drawn from a published national pipeline	Cooperation. The legitimate residual role, and worth seeking
Humanitarian relief in acute emergency	Not applicable	Not applicable	Outside the framework. The test does not apply and should not be applied
Resource-backed lending	None; the lender's trading arm influences the offtake price	No	Transfer with collateral. Analysed at length in NVM-WP 2026/07
South-South and triangular arrangements	Usually yes; both parties seek something specific	Usually yes	Cooperation, more often than the traditional model, though not automatically
Contribution-tested foreign investment	Yes: processing, procurement, skills, listing, disclosure, reinvestment	Yes; the criteria are the host state's and published	Cooperation, provided relief follows measurement rather than preceding it

Table 4. The reciprocity test applied

Source: author's construction, applying the four conditions set out in Section 6 to arrangements commonly on offer to African governments. The resource-backed lending row follows the 8-test analysis in Alagidede (2026e).

Applied honestly, this test excludes a great deal of what is currently called development cooperation and retains three things worth retaining. Concessional finance for genuinely non-commercial public goods, where no reciprocal instrument exists and the alternative is that the thing is not built, remains legitimate and should be sought; the strengthening of the African Development Fund window, and the co-financing arrangements the African Development Bank has been assembling with other multilateral and regional providers, sit in this category. Humanitarian relief in acute emergency is outside the framework entirely and should not be subjected to a reciprocity test at all. And South-South and triangular arrangements, in which the counterpart obligation is structurally easier to specify because both parties are seeking something, satisfy the test more often than the traditional model does.

What the test excludes is the general budget support and technical assistance relationship that has organised the field for four decades. That relationship is in any case ending on the provider's initiative rather than the recipient's, which is a poor way for it to end but

does not change the fact. The constructive response is to have the alternative architecture drafted before the residual is negotiated, which is the purpose of this paper and its companions in the Metanomics Series.

7. Foreign Investment: From Entry Incentive to Contribution Test

7.1 The race and its new arithmetic

African states compete for foreign investment principally by lowering their claim on it. The instruments are tax holidays, reduced corporate rates in designated zones, customs and value added tax exemptions, accelerated depreciation, and stability clauses that freeze the fiscal regime for a period measured in decades. The fiscal paper of this series measured the aggregate cost: revenue forgone through tax expenditures across reporting sub-Saharan countries averages about 3% of GDP and ranges to 13%, and about 30% of countries hold no inventory of these measures at all. The review literature has meanwhile found consistently that incentives rarely rank among the leading determinants of location, which are market access, infrastructure, skills, political stability and the rule of law.

Global minimum taxation changes this from an inefficient policy into a self-defeating one, and the point deserves to be stated in its simplest form because it has not entered African investment promotion practice. Under a coordinated minimum effective rate, where a multinational within scope pays less than the minimum in a source jurisdiction, the shortfall may be collected as a top-up by another jurisdiction in the group's chain. The concession therefore no longer reduces the investor's global tax bill. It transfers revenue from the African treasury that granted it to a foreign treasury that did not. The state has purchased nothing, the investor has received nothing, and a third party has been paid. Any African incentive regime that has not been re-examined against this arithmetic is very likely making a gift to a foreign revenue authority.

The concentration data reinforce the conclusion from the other direction. The world's top 20 host economies attracted more than 80% of global investment in 2025, and strategic sectors accounted for 44% of global greenfield project values, up from 16% in 2020. Investment is being allocated by strategic and technological considerations at a scale that no African fiscal concession can move. Competing on price in that market is not a strategy; it is a subsidy.

7.2 The contribution test

The alternative is to stop paying at entry and start paying for outcomes. A contribution test grants fiscal relief in proportion to measured performance against criteria published in advance, assessed annually, and reversible. It reverses the informational structure of the incentive: instead of the state committing before it knows anything, the state commits after the investor has demonstrated something. The test has six criteria, each observable and each already collected somewhere in African practice.

Criterion	What is measured	Why it is the right object	Instrument
1. Local processing	Share of output processed to a defined stage before export	Value capture at source is the stated object of continental minerals policy; the tonnage exported raw is the counterfactual	Relief scaled to processed share; graduated export duty on unprocessed output
2. Local procurement	Verified value of goods and services purchased from domestically owned suppliers	Backward linkage is where the spillover evidence is strongest	Relief scaled to verified procurement, audited, not self-declared
3. Skills and technology transfer	Counted and certified transfers: qualified nationals, licensed processes, R&D conducted onshore	Capability is the substrate that determines whether the next investment is cheaper	Relief conditional on certified outcomes with a named counterpart institution
4. Local listing	Proportion of the project company's equity listed on a domestic or continental exchange	Converts investment promotion into capital market development at no fiscal cost	Listing requirement above a defined project size, with a phase-in period
5. Revenue transparency	Contract and payment disclosure, project-level reporting, registered contingent liabilities	Rent capture is an information contest before it is a rate contest	Disclosure as a condition of relief rather than a voluntary standard
6. Domestic reinvestment	Share of after-tax profit reinvested in the host economy rather than remitted	Distinguishes an investor building a position from one harvesting one	Differential treatment of reinvested and distributed earnings

Table 5. *The contribution test: six criteria*

Source: author's construction. Criterion 1 follows the value-addition objective of the Africa Mining Vision (2009) and Africa's Green Minerals Strategy (2025); criterion 2 draws on the vertical spillover evidence in Javorcik (2004); criterion 5 applies the information argument developed in Alagidede (2026d). Measurement instruments in column 4 are the author's.

The fourth criterion deserves particular emphasis because it is the bridge to the next section and because it is nearly costless. A requirement that project companies above a defined size list a minority of their equity on a domestic or continental exchange creates listed assets, creates domestic institutional demand, creates a price and a disclosure record where none existed, and gives citizens a claim on the returns generated in their territory. It does not reduce revenue. It is, in the terms of the companion working papers, a regeneration instrument: it leaves the substrate richer than it found it.

7.3 The treaty layer

A contribution test is only as good as the state's freedom to apply it, and that freedom is constrained by the investment treaty network. Africa's states are party to a large number

of bilateral investment treaties, of which about 173 are intra-African, and the older generation of these instruments contains broad fair and equitable treatment standards, expansive expropriation definitions and unrestricted access to international arbitration. A performance requirement introduced after an investment has been made can, under such a treaty, be characterised as a breach of legitimate expectations.

The AfCFTA Protocol on Investment, adopted on 19 February 2023, is the instrument that resolves this, and it does so in the right direction: it preserves the right to regulate, imposes obligations on investors as well as on states, includes a denial-of-benefits clause aimed at treaty shopping, and requires the intra-African treaties it supersedes to be terminated within five years of its entry into force. It enters into force 30 days after the deposit of the 22nd instrument of ratification, and its annex on dispute prevention, management and resolution remains under negotiation. The practical sequencing point for any state contemplating a contribution test is therefore straightforward: ratify first, apply second, and draft the performance criteria so that they are prospective, published and applied uniformly, which is the design that survives an arbitral challenge under any generation of treaty.

8. Tokenised Real-World Assets on African Exchanges

8.1 The market that is being bypassed

African capital markets are thin in a way that the aggregate figures make plain. Africa accounts for 1% of global sovereign bonds against a 3% share of global output. African companies account for 1% of the total value of equity raised globally since 2000. Market capitalisation is concentrated, with South Africa, Morocco and Egypt holding 80% of the continental total. The institutional investor base that would provide depth is itself thin: insurance penetration stands at 3.5% of GDP against a global average of about 7%, and pension fund assets at 23% of GDP against 34% globally, with a considerable share of those assets held in government securities.

Meanwhile a settlement technology has arrived that does not require the microstructure Africa lacks. On-chain value across tokenised real-world assets reached about US\$32.2 billion by June 2026, up from roughly US\$11.8 billion a year earlier, with tokenised Treasuries the largest single category and a tokenised equity segment of about US\$960 million by March 2026. Regulated venues in several jurisdictions have moved from pilot to production, and the direction of travel among major exchanges and custodians is no longer speculative.

The African participation in this, so far, is the wrong shape. Practitioner evidence indicates that tokenisation projects facing restrictive domestic regulation routinely structure issuance for African assets through offshore jurisdictions, with Mauritius the common choice for the continent. The result is a structural mismatch: the token is governed by one legal system and the underlying asset by another. This is precisely the coding problem set out in the companion working paper on infrastructure finance (NVM-WP 2026/07),

reappearing in a new medium. Whoever codes the asset captures the value the coding creates, and an African asset tokenised offshore has been coded offshore. The technology has not changed the question; it has only made the question cheaper to answer badly.

8.2 What Africa already has

The striking feature of the African position is that the continental infrastructure required for an onshore alternative already exists in outline and is not being used for this purpose. The African Exchanges Linkage Project, a joint initiative of the African Securities Exchanges Association and the African Development Bank, provides order routing through the AELP Link platform between participating exchanges, which in its initial phase covered markets representing more than 90% of African market capitalisation, with trade execution, custody and settlement following the host exchange's law and practice. The Pan-African Payment and Settlement System, launched in January 2022 by Afreximbank and the AfCFTA Secretariat, provides multilateral net settlement of cross-border payments in local currencies without routing through correspondent banks outside the continent. Discussions between the 2 to link securities order routing with continental payment settlement have been under way since 2023.

Set beside the Ghanaian and Nigerian virtual asset statutes examined in the companion working paper on infrastructure finance (NVM-WP 2026/07), this is a nearly complete stack. Ghana's Virtual Asset Service Providers Act, 2025 names asset tokenisation services as a licensable activity; Nigeria's Investments and Securities Act, 2025 recognises digital assets as securities under the supervision of its Securities and Exchange Commission. What is missing is not technology, not payment infrastructure, not order routing and not a licensing perimeter. What is missing is the decision to require that African assets be listed and settled within it.

8.3 Which assets fit

Tokenisation is not a general solvent and the asset classes for which it is genuinely suited in African conditions are specific. Only four qualify, on three shared characteristics: the underlying generates an observable cash flow or is verifiable by physical inspection, the minimum economic unit is currently too large for a domestic saver, and the existing registry is either absent or so weak that a new one imposes no switching cost.

Asset class	What is tokenised	Why it fits	What it requires
Infrastructure revenue shares	A defined share of a corridor or utility revenue waterfall	Long-dated, inflation-linked, matched to domestic liabilities; minimum ticket currently institutional	The pooled waterfall and corridor authority specified in the companion working paper; a listing venue
Warehouse receipts and commodity inventory	Title to graded, weighed and stored agricultural or mineral inventory	Verifiable by physical inspection; already the basis of a receipt system in several markets; unlocks	Licensed warehouses, independent assay and grading, a statutory receipt with clear title transfer

Asset class	What is tokenised	Why it fits	What it requires
		working capital at harvest	
Registered urban property	Fractional interests in titled, valued and income-producing urban property	Rent is observable; the unit is otherwise indivisible; land registries are being digitised in several jurisdictions	A reliable registry, a statutory link between the register entry and the token, and valuation standards
Ecological and carbon units	Verified sequestration, biodiversity or watershed service units	The family is being coded now, and the terms set in this decade will govern its distribution	A sovereign registry, an African verification standard, and issuance rules that prevent under-pricing by first movers

Table 6. The four asset classes for onshore tokenisation

Source: author's construction. The infrastructure revenue share design follows the corridor waterfall specified in Alagidede (2026c); the ecological category follows the rent family analysis in Alagidede (2026d). Warehouse receipt and property registry requirements are drawn from the collateral registry literature cited in the reference list.

8.4 five requirements, and the honest limits

An onshore tokenised listing requires five things, and the companion working paper on infrastructure finance (NVM-WP 2026/07) specifies 3 of them in detail: legal characterisation of the token as a claim against a named obligor; settlement finality recognised in law, so that transfer of the token transfers title; and insolvency remoteness of the collateral estate, for which the ring-fenced security estate of the OHADA security agent regime is the ready civil law container. To these the present paper adds two that are specific to a listing rather than a private issuance: a listing and continuous disclosure standard applied to the token as it would be to a share, and a settlement link between the exchange and continental payment infrastructure so that the money leg does not exit the continent to complete a domestic trade.

The limits must be stated with equal precision, because the field attracts more enthusiasm than it earns. Divisibility is not liquidity: a tokenised illiquid asset is an illiquid asset with better plumbing, and fractional units of a corridor revenue share will trade thinly until there is a reason for anyone to trade them. Decentralisation is a design achievement rather than a technical property, and the concentration of governance and control documented in the decentralisation illusion literature applies with full force to any African implementation. And a token cannot repair a registry: where the underlying title is contested, tokenising it distributes the contest more widely rather than settling it. The correct sequence is registry, then statute, then token, and any programme that reverses it will produce an instrument that fails at the first redemption under stress.

8.5 A sequenced pilot

The correct way to test this proposition is not a strategy document but a single transaction, designed so that its failure is informative. The pilot has three phases, each with a stated test.

Stated this way, the proposition is falsifiable at each stage and the cost of learning is bounded. That is a considerable improvement on the current alternative, which is that African assets continue to be tokenised offshore while African regulators write consultation papers about whether tokenisation is coming.

9. Cooperative and Communal Capital

9.1 The balance sheets that already exist

Africa's cooperative savings institutions are usually discussed as a development curiosity. They are, in fact, among the continent's larger financial aggregates and they are documented.

In South Africa, the stokvel sector comprises more than 810,000 active groups with about 11 million members, collecting an estimated R50 billion in savings annually. The institutional architecture is more developed than is generally appreciated: the National Stokvel Association of South Africa is a self-regulatory organisation approved by the Prudential Authority and is itself a registered financial co-operative, and it offers a Stokvel Savings Bond carrying a fixed rate guaranteed by the National Treasury. The gains from formalisation are measurable: in 2025 alone, stokvels saving digitally with a single bank, FNB, earned R256 million in interest that would otherwise have been forfeited and avoided R211 million in withdrawal fees, nearly half a billion rand returned to communities through a change of mechanism rather than a change of behaviour.

In Kenya, the regulated savings and credit cooperative sector holds assets of about KSh 1.2 trillion, with more than 6 million members in the deposit-taking segment; net loans constitute 73.36% of total assets, amounting to KSh 789.42 billion, and disbursements in the first quarter of 2026 reached KSh 115.73 billion, a 16.23% increase on the same period of 2025. Across the continent, cooperative membership exceeds 40 million. The equivalent institutions are present in every African economy under local names: susu in Ghana, esusu and ajo in Nigeria, tontines across francophone West Africa, chamas and merry-go-rounds in East Africa.

Read against the mycelial mechanism, these are not curiosities. They redistribute from surplus toward need through the rotation; they keep the group rather than the member as the unit of account; they sense deficiency and correct it by reciprocal reward, since the member who fails to contribute is excluded by the group rather than pursued by a court; and they regenerate their own substrate, in that each completed cycle enlarges the trust that makes the next one possible. They are human mycelia, and they have been running the Omnidox architecture for centuries without requiring it to be explained to them.

COMMUNAL CAPITAL

Savings pooled on the authority of a relationship rather than a contract, governed by monitored norms, graduated sanction and mutual obligation, and held in institutions whose unit of account is the group rather than the member. It is Africa's most durable financial technology and its most under-deployed one. Its limitation is not governance but the asset side: it lends to its own members and can hold nothing longer than a member's need. Give communal capital a lawful, rated, listed asset to hold, and the continent acquires a domestic investor base that no amount of foreign promotion could purchase.

Yegandi Alagidede

9.2 *The missing asset side*

The limitation is precise and it is not a criticism. A stokvel or a savings cooperative deploys its members' contributions into loans to those same members, or into a bank deposit, or into short-dated government paper. It cannot hold a 20-year corridor revenue share, for four reasons: the ticket is too large for any single group, the instrument is unrated and therefore outside what a prudent committee will hold, there is no secondary market if a member needs to exit, and in most jurisdictions the legal form of the group does not permit it to hold a security at all.

Each of the four is removable, and the removal defines the instrument set. What follows extends the argument of the companion working paper on infrastructure finance (NVM-WP 2026/07), which specifies a reserved tranche in corridor financings for African institutional investors but treated that category as pension funds and insurers. The category is larger.

9.3 *Why the form is efficient, not merely traditional*

It is worth stating why these institutions persist, because the usual explanation, that they are what people use when banks are absent, is incomplete and patronising. Besley, Coate and Loury (1993) showed formally that a rotating savings association can dominate autarkic saving for an indivisible purchase: because members receive the pot in turn, all but the last receive their lump sum earlier than they could have saved it alone, and the welfare gain is real rather than a compensation for exclusion. Ostrom (1990) established the governance conditions under which such arrangements are sustained across generations: monitored norms, graduated sanction, conflict resolution mechanisms of the members' own devising, and nested institutions. Both findings say the same thing in different languages. These are not deficient banks. They are a different institutional technology with a different comparative advantage, and their advantage is in the enforcement of obligations between people who will meet again.

That advantage is precisely what formal finance in Africa lacks and cannot buy. A bank enforces through a court that is slow and a collateral registry that is frequently absent; a stokvel enforces through a relationship that the defaulter must live inside afterwards. The policy conclusion is not that cooperative institutions should be converted into banks,

which would destroy the enforcement mechanism that makes them work, but that they should be given access to assets while retaining their form. The pooled vehicle described below is designed for exactly that: the group keeps its constitution, its meetings and its sanctions, and acquires a unit in a fund it could not have held directly.

10. The Instrument Ledger

The paper's instruments can now be consolidated and subjected to a single test. The columns of Table 7 are the reciprocity test stated operationally: who supplies the capital, who bears the risk if the project fails, who sets the terms, and whether an obligation runs in both directions. An instrument that fails the last column is a transfer, whatever its label, and should be entered into with that understood.

Instrument	Source of capital	Who bears the risk	Who sets the terms	Reciprocity
Diaspora bond	Diaspora savings stock	The investor, at market-consistent pricing	The issuer, within market discipline	Symmetric: return for capital, with an affinity discount both parties understand
Diaspora savings account	Diaspora savings stock, continuously	The depositor, subject to the convertibility guarantee	The issuing state by statute	Symmetric, provided convertibility is legislated rather than promised
Future flow securitisation	International bond investors	The noteholder, but only after the offshore account is satisfied	The arranger and the rating methodology	Asymmetric: the structure works by removing the flow from national control
Reciprocal cooperation	Concessional or bilateral provider	Shared, where a counterpart obligation is enforceable	Both, if the four conditions are met	Symmetric only where the test of Section 6 is satisfied
Contribution-tested FDI	The foreign investor	The investor, with relief earned rather than granted	The host state, by published criteria	Symmetric: relief is payment for a delivered and measured contribution
Tokenised onshore listing	Domestic and diaspora retail, plus institutions	The holder, under domestic securities law	The host exchange and regulator	Symmetric, and the coding value stays onshore
Pooled cooperative vehicle	Communal savings, aggregated	The member, through a regulated fund with a redemption window	The cooperative movement and its regulator	Symmetric and internal: the saver and the beneficiary are the same person

Table 7. The instrument ledger: external and communal capital

Source: author's construction, applying the reciprocity test set out in Section 6 to the instruments specified in Sections 5 to 9. The characterisation of future flow securitisation in row 3 follows the sovereignty cost analysis of the convertibility module in Alagidede (2026c).

Read down the final column and the paper's argument appears in a single view. Of the seven instruments, six are symmetric, and four of those six mobilise capital that is already African or already committed to Africa. The single asymmetric instrument is the one that most closely resembles conventional external finance, and it is included precisely because it is sometimes the right choice, provided the state enters it knowing what it is paying and in what currency.

11. Objections

Remittances are private money and the state has no business directing them.

Correct, and nothing here proposes direction. Every instrument in section 5 is voluntary, and the paper's position is that compulsory diversion of remittances, whether by mandatory conversion, surrender requirements or preferential exchange rates, is both wrong and self-defeating, since it drives the flow into informal channels where it becomes invisible. What is proposed is that a state which currently offers a diaspora saver nothing but an 8.78% transfer charge should instead offer a lawful, well-priced, credibly supervised instrument and let the saver decide. The distinction between offering an instrument and directing a flow is the whole of the difference between this argument and financial repression.

Diaspora bonds have a poor African record and the enthusiasm is misplaced.

The record is mixed rather than poor, and the variance is informative. Ethiopia's programme, despite thoughtful design features including multi-currency denomination and low minimum subscriptions, fell short and attracted securities enforcement; Nigeria's 2017 issuance was oversubscribed to 130% with investors from 14 countries. The difference was regulatory credibility, listing venue and market-consistent pricing, not the depth of national feeling. The correct inference is not that the instrument fails but that affinity does not substitute for coding, which is the thesis of the companion working paper on infrastructure finance (NVM-WP 2026/07) applied to a retail investor. Where a state cannot supply the credibility, it should build the instrument set of section 5 in the order given, since instruments 2, 4 and 5 require less of it than instrument 1 does.

Refusing to offer incentives will lose the investment to a neighbour.

This is the race to the bottom described from inside, and it is the reason the remedy must be partly collective. There are three things that nonetheless hold for a state acting alone. The evidence indicates that incentives rarely rank among the leading determinants of location, so the volume at risk is smaller than the fear. The contribution test does not abolish relief; it reprices it against measured performance, so an investor who intends to process, procure and train locally is no worse off and may be better off. And under coordinated minimum taxation the concession no longer benefits an in-scope investor at all, so the state that persists in offering it is transferring revenue to a foreign treasury for

nothing. The remaining exposure is real and it argues for a continental floor, which is a matter for the African Union rather than for any single ministry.

Tokenisation is speculative froth attached to a serious paper.

Much of it is, and section 8.4 states the limits without softening them: divisibility is not liquidity, decentralisation is a design achievement rather than a property of the technology, and a token cannot repair a contested registry. The argument here is narrower than the enthusiasm and therefore more defensible. Tokenisation contributes three things to an African capital market and no more: divisibility, which allows a domestic saver to hold a fragment of an asset otherwise priced for institutions; provenance, which lets a claim carry its own audit trail; and programmability, which makes covenants cheap to monitor. If those three cannot be delivered under the five requirements set out, they should not be delivered at all. The urgent part of the argument is defensive rather than promotional: African assets are being tokenised now, offshore, and the choice is not whether but where.

Cooperatives cannot bear infrastructure risk and their members should not be asked to.

The objection is serious and it constrains the design rather than defeating it. Nothing here proposes that a burial society hold construction risk. The instrument proposed is a regulated pooled vehicle holding a rated, credit-enhanced, operating-phase instrument with a redemption window sized to members' liquidity needs, which is a materially different exposure from a greenfield concession. The prudential question is the same one the pension sector faces and it should be answered by the same regulator, on the same standards, with the same right to decline. If the cooperative movement, offered a rated instrument through a properly constituted vehicle, chooses not to hold it, that is a legitimate outcome and the thesis has been tested.

Rejecting aid harms the poorest people now.

Nothing in section 6 proposes rejecting anything, and the framing should be resisted. Humanitarian relief in acute emergency is placed outside the reciprocity test entirely, and concessional finance for genuinely non-commercial public goods is identified as legitimate and worth seeking. The reciprocity test is addressed to the general budget support and technical assistance relationship, and it is addressed to it at a moment when that relationship is contracting, by 23.1% in 2025 alone, on the provider's initiative. The choice before African finance ministries is not between aid and no aid. It is between having the alternative architecture drafted before the residual is negotiated and drafting it afterwards, from a weaker position.

12. Conclusion: The Capital That Already Comes

Africa's external capital hierarchy is inverted, and the inversion is measurable. Remittances passed US\$100 billion in 2024 and carry no architecture beyond a transaction fee. Foreign investment reached about US\$70 billion in 2025 and carries promotion agencies, treaties and concessions whose aggregate fiscal cost across reporting

sub-Saharan countries averages about 3% of output. Bilateral development assistance to Africa fell 23.9% in 2025 to US\$29.0 billion, and carries the largest institutional apparatus of the 3. The flow that arrives most reliably is the one nobody has designed for.

The organising principle proposed here is reciprocity, and its virtue is that it is a test rather than a sentiment. Does the arrangement create an obligation on both sides? Remittances already do, which is why they are stable. Cooperation can, if the provider undertakes something enforceable, the recipient sets the purpose, capability transfer is priced and measured, and the exit is designed at inception. Foreign investment can, if relief is earned against published criteria after entry rather than granted before it, which under coordinated minimum taxation is in any case the only version that does not simply gift revenue to a foreign treasury. And communal capital is reciprocal by construction, because the saver and the beneficiary are the same person.

There are four practical conclusions. Reduce the transfer charge, which is a manufactured cost, and offer the diaspora an instrument rather than a fee; the sum released by reaching the 3% target lies between a tenth and a fifth of all bilateral aid to the continent and requires no donor. Draft the post-aid cooperation architecture now, while the residual is still being negotiated. Replace the entry incentive with the contribution test, of which the local listing requirement is the single most valuable element and costs nothing. And give communal capital an asset side, because a continent with 11 million stokvel members in 1 country and cooperative assets above KSh 1.2 trillion in another does not lack a domestic investor base; it lacks anything lawful for that base to hold.

The deeper point returns to where this series began. The Monodox posture toward external capital is supplication: a fixed pool exists elsewhere, and the task is to attract a larger share of it by offering better terms than the neighbour. The Omnodox posture is exchange: the network already generates a surplus, the question is what each party brings and what each is owed, and the arrangements worth entering are the ones in which something is owed in both directions. On that reading the most valuable external capital Africa receives is the money sent home by its own people, for the simple reason that it is the only flow given without conditions by parties who expect nothing back, and it is therefore the only flow the continent already fully owns. Attend to it, and the question of what to ask of others becomes a great deal easier to answer.

Unseen roots. Abundant harvest.

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Evidence Dossier: Verified Figures and Findings

Figures are stated as they appear in the argument, each attributed to a primary source. Where an estimate is range-bounded, the range is given. Where a calculation is the author's own, its assumptions are stated in the text.

Claim	Verified figure or finding	Source
Remittances to Africa	Above US\$100 billion in 2024, with World Bank estimates above US\$104 billion; about US\$90.2 billion in 2023, roughly 5.2% of continental output and about double ODA; Egypt US\$22.7 billion, Nigeria US\$19.8 billion, Morocco US\$12 billion in 2024; at least 4% of GDP in 19 of 54 countries; above 20% of GDP in The Gambia, Lesotho and Comoros	World Bank remittance data; AfDB working paper (2025); ISS African Futures (2025)
Remittances to sub-Saharan Africa	About US\$54-56 billion in 2023-2024; remittances have exceeded ODA to LMICs in every estimate since 2000 and exceeded FDI to LMICs by more than US\$270 billion in 2023	Ratha et al. (2024); IOM Migration Data Portal
Ghana remittances	Officially recorded US\$6.65 billion in 2024; estimated near US\$11.5 billion including informal channels, approaching a third of foreign exchange earnings, exceeding cocoa proceeds and approaching gold proceeds	Bank of Ghana and sector estimates as reported (2025)
Transfer costs	Sending US\$200 to sub-Saharan Africa averaged 8.78% in Q1 2025 against a global 6.49%; the SDG target is 3%; costs have been broadly stable across 36 quarters; of 13 corridors priced above 20% in Q3 2025, 9 originate in sub-Saharan Africa	World Bank Remittance Prices Worldwide (2025; 2026); Vishwanath and Sen (2025)
Diaspora savings	Estimated at more than 3% of regional output for sub-Saharan Africa; for Ghana possibly as high as 85% of gross national savings	Famoroti (2018), Brookings Foresight Africa
Diaspora bonds	Israel has raised over US\$44 billion since 1951; India about US\$11 billion across 1991-2000 (US\$1.6 billion in 1991); Ethiopia's 2008 and 2011 issues fell short and drew SEC enforcement resolved by settlement, with about US\$50 million raised for a project costed near US\$5 billion; Nigeria's 2017 issue of US\$300 million at 5.625% over 5 years was oversubscribed to 130% with investors from 14 countries	African Leadership Magazine (2025); AFIS (2025); CediRates (2026)
Official development assistance	DAC ODA US\$174.3 billion in 2025, down 23.1% in real terms, 0.26% of GNI, the largest annual contraction on record; bilateral ODA down 26.4% to US\$126.4 billion; bilateral ODA to Africa US\$29.0 billion (down 23.9%), to sub-Saharan Africa US\$24.5 billion (down 26.3%), to LDCs US\$23.5 billion (down 25.8%); the five largest providers accounted for 95.7%	OECD (2026), preliminary 2025 ODA data

Claim	Verified figure or finding	Source
	of the decline and the United States for 75.1%; a further 5.8% decline projected for 2026 at the April release, revised to about 6.9% in the OECD's subsequent near-term projections	
The Ukraine comparison	Bilateral ODA to Ukraine including EU institutions totalled US\$44.9 billion in 2025, the largest volume ever provided to a single country, exceeding total bilateral ODA by DAC members to all LDCs or to all countries in sub-Saharan Africa combined	OECD (2026)
Foreign direct investment	Africa received about US\$70 billion in 2025, down from an exceptional US\$94 billion in 2024, the third-highest level since 1990 and about one third above the 2010-2024 average; global FDI rose 6% to US\$1.6 trillion; Egypt about US\$15 billion; African LDCs about US\$33 billion; greenfield project values fell almost a third while project numbers rose	UNCTAD (2026), World Investment Report 2026
FDI concentration	The top 20 host economies attracted more than 80% of global FDI; strategic sectors accounted for 44% of global greenfield project values, up from 16% in 2020; South Africa recorded negative inflows of about US\$6 billion after a single corporate restructuring; Mozambique rose 80% to US\$6 billion	UNCTAD (2026)
African capital markets	Africa accounts for 1% of global sovereign bonds against a 3% share of global GDP; African companies account for 1% of global equity raised since 2000; South Africa, Morocco and Egypt hold 80% of market capitalisation; insurance penetration 3.5% of GDP against a global average of about 7%; pension assets 23% of GDP against 34%	OECD (2025), Africa Capital Markets Report 2025
Tokenised assets	On-chain value across tokenised real-world assets reached about US\$32.2 billion by June 2026, from about US\$11.8 billion a year earlier; tokenised equity about US\$960 million by March 2026; African projects commonly structure issuance offshore, with Mauritius the frequent choice	rwa.xyz data as reported (2026); Investax (2026); practitioner survey evidence (2026)
Continental market infrastructure	The African Exchanges Linkage Project, of ASEA and the AfDB, links markets representing more than 90% of African market capitalisation through the AELP Link order-routing platform, with settlement on the host exchange; PAPSS,	ASEA and AfDB; Afreximbank

Claim	Verified figure or finding	Source
	launched 13 January 2022 by Afreximbank and the AfCFTA Secretariat, provides multilateral net settlement in local currencies without correspondent banks outside Africa	
Stokvels	More than 810,000 active groups, about 11 million members, an estimated R50 billion saved annually; NASASA is a self-regulatory organisation approved by the Prudential Authority and a registered financial co-operative; in 2025 digitised stokvels earned R256 million in interest and avoided R211 million in withdrawal fees	Ipsos (2024); NASASA; sector reporting (2026)
Savings and credit cooperatives	Kenya's regulated SACCO sector holds about KSh 1.2 trillion in assets with more than 6 million members; net loans are 73.36% of total assets at KSh 789.42 billion; Q1 2026 disbursements were KSh 115.73 billion, up 16.23%; African cooperative membership exceeds 40 million	SASRA (2026); World Council of Credit Unions data as reported

Table 8. Evidence dossier

Note: all figures are reproduced as published by the cited source. Where an institution has revised an estimate, the most recent published version is used. Calculations by the author are identified as such in the text.

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Nile Valley Multiversity Working Paper Series

Nile Valley Haven, Techiman, Bono East Region, Ghana · NVM-WP 2026/05 · August 2026

Porthologos Press

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